

TOM HARRIS

# Collaborative Research and Development Projects

A Practical Guide

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Foreword by Ray Browne

With 16 Figures

 Springer

Dr Tom Harris  
www.hi-consulting.com

There are no warranties, expressed or implied, on any of the methods or approaches described in this book. You must use them at your own risk and seek legal and professional advice as appropriate. They do however represent my best endeavors to convey good practice in creating and running a successful collaborative research and development project.

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# Foreword

By Ray Browne

Developing new techniques, implementing innovative technology and solving awkward problems have always been keen interests of mine. I spent the first twenty years of my career undertaking scientific research and the last twenty-five years helping industry do the same, largely through supporting government sponsored research and development programmes. The scientists, engineers and business people who undertake such R&D projects are all great people for whom I have considerable respect. They are usually very enthusiastic and manifestly pragmatic, but they still need as much help as they can get, particularly in attracting the support that is often essential if they are to realise the full benefits of their work. I am sure this book will provide them with this support in a truly practical and user-friendly manner.

Collaborative R&D, especially when external funding is involved, is not only about meeting deadlines and deliverables but perhaps more importantly about ensuring a return on the investment made in the project. This book's particular strength lies in its focusing attention on achieving this return. It also shows a crucial dependence on sound project management, not only of the core R&D but also of the commercial activities that are all pre-requisites for success.

The author, Tom Harris, is a friend and colleague who I have known as a scientist, successful business man and consultant. In this book he combines his considerable experience with practical hands-on advice that will be of benefit to anyone involved in

collaborative projects. This is not another theory-based textbook, it is essential reading and I recommend it to all aspiring collaborators.

*Ray Browne is currently a Deputy Director in the Office of Science and Innovation at the Department of Trade and Industry in the UK where he is responsible for managing the department's funded research and development projects.*

## Acknowledgements

There are many people that deserve my thanks for the inspiration and creation of this book. The approaches and methods have been developed through my experiences working with many projects as an academic, industrialist and monitoring officer, together with the adaptation of project management techniques developed by, among others, J Rodney Turner of Henley Management College.

From my academic and industrial days, I would particularly like to thank Prof John MacIntyre of Sunderland University, Prof Ian Nabney of Aston University, Paul Wilkinson, Chris Kirkham and Lee Gamlyn, TWI, Arjo Wiggins, SP Tyres and Cardionetics Ltd.

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Of all these individuals, Ray Browne deserves my special thanks for his friendship and support and for honouring me by writing the foreword for this book.

Last, but by no means least, I thank my wonderful wife, and once again, not just for doing all the diagrams.



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# Introduction

Getting involved in a collaborative research and development project can be one of the most exciting, rewarding and business changing experiences you and your organisation ever take on. The opportunities to push the boundaries of technology, solve major problems, open up new markets and be part of a leading edge team, drive thousands of companies and universities to work together every year. All economies recognise these benefits and encourage these collaborations by offering grant funding, tax relief schemes and other benefits worth hundreds of millions of dollars each year.

For many projects the outcomes are highly beneficial, including the development of new products, services and the opening up of new market opportunities. However for too many, the project does not bring all that was hoped for. The reasons behind these lost opportunities are varied but a great deal of responsibility lies in poor appreciation of what is involved in running a collaborative project and in poor planning and communication between the partners. Perhaps the most common and serious reason however, is the lack of appropriate understanding of how to exploit the results of the project.

This book has been written to provide you with a user guide for your collaborative R&D project. We will start with an analysis of grant funding, looking to see what help might be available to you and how best to secure it. We will look at the legal arrangements that need to be entered into between you and your partners. In the third chapter we get much more hands on and I provide methods for planning your project and building a sound business case for it. Next we look at the special project management considerations

involved in collaborative projects and present methods to keep the momentum going.

The following two chapters are provided to help you understand the other members of your consortium. If you are an industrial or commercial animal and have not worked with academics before, this short guide will provide an insight into their motives and working practices. The same is provided for academics to help you appreciate the commercial world so that you can understand what drives your industrial partners.

In the next chapter we look at what can go wrong and how best to firstly recognise and avoid the problems, and secondly how to deal with them if you find yourselves in trouble.

The penultimate chapter deals with exploitation. Although the last but one chapter in the book, it is perhaps the most important and describes a process that starts before the project and continues long after.

Finally we look at what happens at the end of the project and how your management approach changes. We also look at evaluating the results of your hard work.

My own career started as a university researcher developing novel computing systems for analysing complex data. As I built my research group, it was the applications that were more exciting than the technology itself and so all the projects that we took on were collaborative. We worked with the healthcare, energy generation, aerospace and paper sectors to name but a few. After spinning out a company from one of these projects, I was then involved in collaborative R&D projects from the industrial side. Currently my management consultancy, Hi Consulting, is part of the delivery team for the UK Department of Trade and Industry's Technology Programme. This programme supports in excess of \$1.5 billion worth of collaborative R&D. My role in the programme is practical